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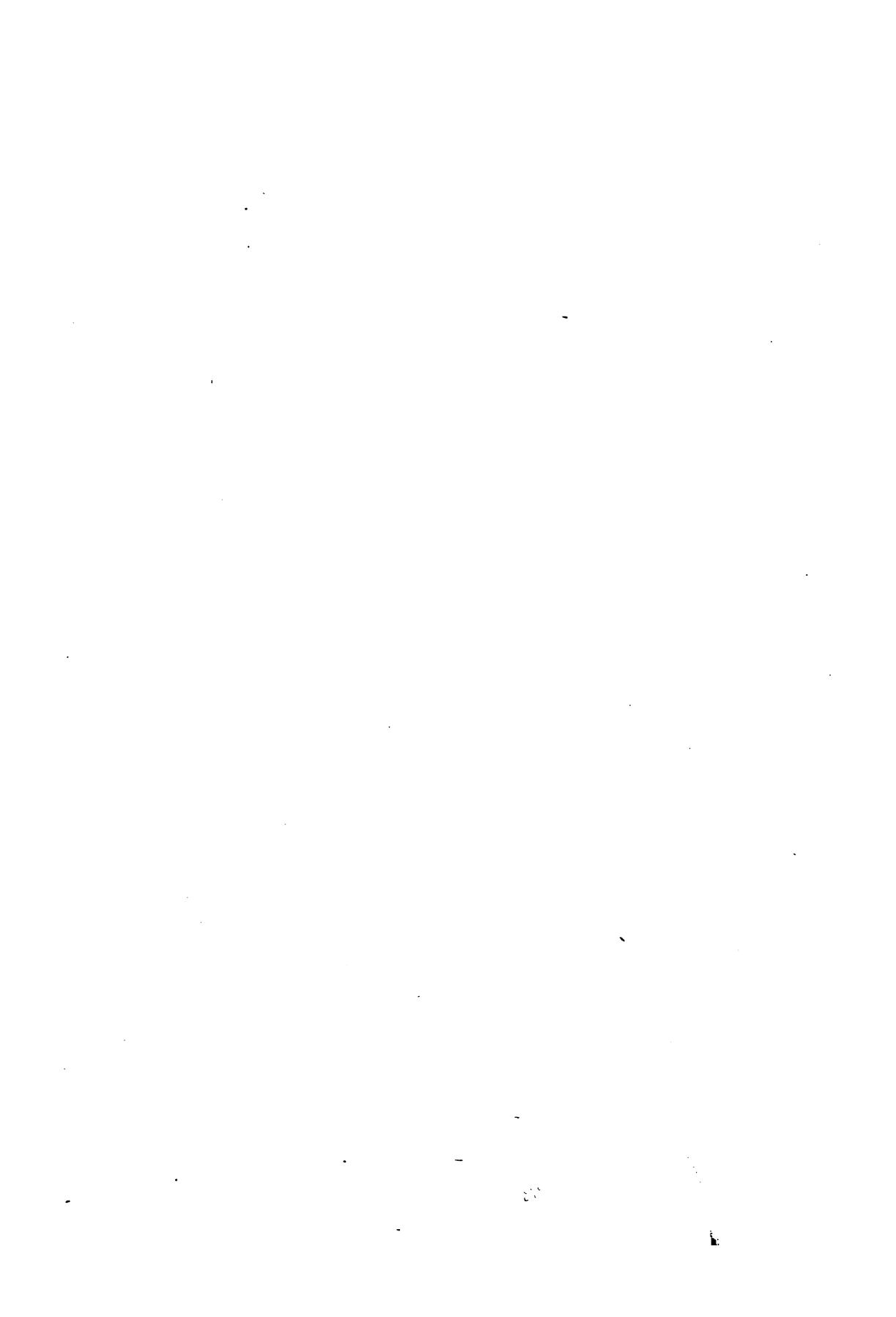
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Township Rural High Schools

In
Michigan

Bulletin No. 25
1907

By the State
Superintendent
of
Public
Instruction



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STATE OF MICHIGAN
DEPARTMENT OF PUBLIC INSTRUCTION.

LANSING, September 20, 1907.

To County Commissioners and all interested in rural high schools:

The legislature of 1901, by Act 144 of the Public Acts, authorized the establishment and maintenance of rural high schools in townships where no graded schools are already established. The reason for such a statute is that in many of our townships there are no opportunities for advanced instruction for children, and parents if they desire that their children receive such instruction must send them to some school miles away from home and pay their board and tuition. As a result, many of our bright young people who have completed the eighth grade are unable to attend high school because their parents are not in position to bear the extra expense. This makes an unfair discrimination in favor of the children of wealthy parents. But by the establishment of a rural high school in a township, all boys and girls will have equal educational privileges so far as the public schools are concerned. This is my idea of free public schools.

I most earnestly urge upon county commissioners and all interested in schools that rural high schools shall be established in every township where no graded school already exists, and it is my opinion that the law should be so amended that, even in townships where there are graded school districts, rural high schools may be established for the benefit of the rural communities.

I give in this bulletin the law governing rural high schools, together with a course of study, list of reference books, and some suggestions in regard to their organization and equipment. This course of study it seems to me will meet the needs of our rural young people.

Very respectfully,



Superintendent of Public Instruction.

[Act 144, 1901]

An Act to provide for the establishment and maintenance of rural high schools.

The People of the State of Michigan enact:

(297.) SECTION 1. The township board of any township, not having within its limits an incorporated village or city, upon the petition of not less than one-third of the taxpayers of such township for the establishment of a rural high school, shall submit such question to a vote of the qualified electors of said township at a special election called for that purpose within sixty days from date of receipt of said petition.

(298.) SEC. 2. All elections ordered by any township board in pursuance of section one of this act shall be held at the usual place or places of holding township elections, and notice shall be given and the election conducted in all respects as provided by law for the election of township officers and the ballots shall have printed thereon, "For rural high school—yes," "For rural high school—no."

(299.) SEC. 3. If more votes are cast in favor of such high school than against it at such election, the qualified electors of said township shall elect at their next annual election of township officers a board of trustees of three members, one for one year, one for two years and one for three years, and on the expiration of their terms of office and regularly thereafter their several successors shall be elected in like manner for a term of three years each. The township clerk shall be ex officio member and the clerk of the board, and the township treasurer shall be ex officio member and treasurer of the board with the same power as other members of the board.

(300.) SEC. 4. Said board of trustees shall meet on the third Monday in April of each year and organize by electing one of the trustees as president. Regular meetings of the board shall be held on the second Mondays of May, August, November, and February, in each year. Special meetings may be called upon five days' notice by the president or secretary. The board shall have power:

(a) To supervise and visit the school;
(b) To admit all children of the township above the sixth grade and to admit and provide rates of tuition for non-resident pupils if they so elect;

(c) To select and adopt text books;

(d) To appoint legally qualified teachers;

(e) To fix wages, make general rules and regulations for the control of the school, suspend or expel pupils, fix the time of school which will not be more than ten months nor less than seven in any one year;

(f) To rent or to purchase and hold real estate for such township high school, build and furnish schoolhouses, determine location of grounds and building, which shall be as near the center of the township as practicable, according to sanitary conditions, and to receive and hold bequests and gifts for the benefit of the school, and to dispose of property belonging to the district subject to the provisions hereinafter named;

(g) To provide a course of study which shall be approved by the superintendent of public instruction and the president of the Michigan Agricultural College, and shall not consist of more than four years' work. Said course of study may include instruction in manual training, domestic science, nature study and the elements of agriculture;

(h) To estimate and vote the amount of tax necessary to support the school at a meeting previous to October first in each year and report the same to the supervisors, which amount shall be spread upon the tax roll the same as other district taxes, and in their discretion borrow money for current expenses which amount shall not exceed fifty per cent of the amount of tax voted.

(i) To publish annually in one newspaper of the township or county a statement of the proceedings of the board meetings and an itemized account of all receipts and expenses, and file a copy of the same in the office of the county school commissioner and State superintendent of public instruction within sixty days of the date of publication of the same.

(301.) SEC. 5. The secretary of the board shall receive not to exceed fifty dollars per annum for his services. It shall be his duty to keep the records, provide supplies, visit the school and make annual reports to the school board, the county school commissioner and the State superintendent of public instruction in such form as the superintendent of public instruction shall direct.

(302.) SEC. 6. All orders on the treasurer for moneys shall be ordered by the board and signed by the secretary and president.

(303.) SEC. 7. A majority of the taxpayers of the township shall determine the amount to be expended in the grounds and building of said school and may bond the township for such amount; Provided, That the amount of said bonds shall not exceed five thousand dollars, and that the period of such bonds shall not continue beyond ten years.

(304.) SEC. 8. The high schools established under the provisions of this act shall be under the supervision of the county commissioner of schools, and all questions of management, support and control arising under the provisions of this act and not expressly provided for therein shall be subject to the provisions of the general school laws of this State.

ORGANIZATION.

1. The township board of any township not having within its limits a high school is required, upon the petition of not less than one-third of the taxpayers of such township, to call a special election within sixty days from the receipt of said petition.
2. At such special election the question of the establishment of a rural high school will be voted upon. The election is to be held at the usual place or places of holding township elections.
3. If a majority of the votes cast are in favor of the establishment of a rural high school, the qualified electors of the township at the next annual meeting shall elect a board of trustees of three members who, with the township clerk and township treasurer, shall constitute the township board of education.
4. This board of trustees must meet on the third Monday of April of each year and organize by electing a president. The township clerk is ex officio clerk of the board and the township treasurer is ex officio treasurer of the board.
5. Regular meetings of the board are to be held on the second Mondays of May, August, November and February, and special meetings may be called upon five days' notice.
6. Section four of the original Act was amended by the legislature of 1907 in clause (b) by providing that all children above the sixth grade may be admitted if their parents desire to send them.
7. The powers and duties of the board of education are specified in the statute, and among them the board is authorized to purchase and hold such real estate as may be necessary, to determine the location of grounds and buildings, and to build and furnish a schoolhouse when authorized by the voters of the township.
8. They are to provide a course of study which must be approved by the Superintendent of Public Instruction and the President of the Michigan Agricultural College, the course to consist of not more than four years.
9. They are to estimate and vote the necessary tax to support the school and report this tax before October first in each year. They may also borrow money for current expenses for an amount not to exceed fifty per cent of the tax.
10. The board is required to publish in a newspaper an annual statement of all receipts and expenses and make all necessary reports to the Superintendent of Public Instruction and county commissioner of schools.
11. The taxpayers of the township are authorized to determine and vote the amount of money to be expended in grounds and buildings and they may bond the township if they desire, the limit of the bond to be five thousand dollars.
12. High schools established under this Act are under the supervision of the county commissioner and the Superintendent of Public Instruction.

DEPARTMENT OF PUBLIC INSTRUCTION.

SUGGESTIONS.

(a) It should be noted that the special election provided for in this Act may be held at any time during the year, but that the trustees or board of education can be elected only at the time of the annual township meeting.

(b) Frequently the town hall or some other public building may be rented, or a part of it rented, and fitted up for temporary school use.

(c) The course of study given herewith has been approved by the President of the Agricultural College. The industrial side of education is emphasized in this course together with such academic high school training as will give a liberal English education to our young people. In case students below the ninth grade are admitted they will pursue the usual subjects for seventh and eighth grades.

(d) It is not necessary that the course of study for a township high school shall conform to the usual course of study in city high schools, but it will train our young people for admission to the Agricultural College and normal schools if they desire to attend such institutions.

(e) The building constructed for the use of a rural high school should be large enough for two assembly rooms with superintendent's office and two or three recitation rooms on the first floor, and basement under the entire building. The basement should be constructed mostly above ground, extending not over two or three feet below the surface. It should be divided into three rooms, one for a furnace and fuel room, another for the girls for domestic science, and the third for the boys for manual training work.

(f) There should be at least three recitation rooms which may be used as class rooms. One of these should be fitted up as a physical laboratory for simple experiments in botany, physics and agriculture. The others should be fitted up as chemical laboratories for experimental work in agriculture and chemistry.

(g) The lot selected for the school should contain not less than two acres and it would be better if it contain five acres. This would give ample room for a play ground and a good sized plot for experimental purposes in agriculture.

(h) The pupils themselves, having been supplied with proper material by the board of education, should, under the direction of their instructors, do the work of decorating the school grounds, that is, planting trees, shrubbery flower gardens, etc.

(i) The rural high schools should be closely affiliated with the Agricultural College, and arrangements can be made with several professors of said College to appear before the rural high school and give lectures on various subjects.

EQUIPMENT.

The equipment necessary for teaching the different subjects will depend entirely upon the location of the school, the number of students and the character of instructors. The following is only suggestive and in all cases the material should be purchased as the need arises.

AGRICULTURE.

- $\frac{1}{2}$ doz. hoes.
- $\frac{1}{2}$ doz. garden rakes.
- $\frac{1}{2}$ doz. spades.
- $\frac{1}{2}$ doz. earth forks.
- 1 doz. garden trowels.
- 1 doz. pruning knives.
- $\frac{1}{2}$ doz. pruning shears.
- 1 hand cultivator.
- 1 hand weeder.

A supply of whatever seeds, grains, plants or bulbs that are to be planted.

MANUAL TRAINING.

The equipment for this work may be made as extensive as required and much instruction can be given with a small amount of material. The following is given as a suggestive list which may be purchased entire or in part. Usually these can be purchased from local dealers but the regular school supply houses also handle the articles.

Six single benches with rapid acting vise, costing \$8 to \$15 each.
Double bench with rapid acting vises, \$10 to \$18 each.

TOOLS.

Set for each individual.

- 1 No. 5 iron plane.
- 1 10 in. Atkins back saw.
- 1 13 oz. adz eye hammer.
- 1 6 in. Stanley graduated all iron try square.
- 1 Stanley patent boxwood brass faced marking gauge.
- 1 each $\frac{1}{2}$ in. and 1 in. firmer tang chisels, handled and sharpened (Buck Bros.).
- 1 Swedish sloyd knife.
- 1 hickory mallet.
- 1 9 oz. all bristle bench brush.
- 1 4 in. Champion screw driver.
- 1 6 in. winged divider.

Approximate cost, \$5.00.

Set of general tools sufficient for six pupils, which should be duplicated for each six additional pupils in the class, except in bit sets which should be added to in assorted sizes as required.

- 1 8 in. ratchet brace.
- 1 Buck Bros. rosehead countersink.
- 1 Buck Bros. screw driver bit.
- 1 Buck Bros. 8 in. draw knife.
- 1 Stanley spoke stave.
- 1 26 in. rip saw, Atkins No. 53.
- 1 22 in. cross cut saw, Atkins No. 53.
- 1 6 in. coping saw with 1 doz. extra blades.
- 3 cabinet scrapers.
- 3 10 in. $\frac{1}{2}$ round cabinet files.
- 1 steel 24 in. x 16 in. framing square.
- 6 6 in. malleable iron clamps.
- 6 36 in. Sheldon patent malleable cabinet clamps.
- 1 2 in. x 6 in. combination oil stone.
- 1 3 in. bronzed oil can.

Approximate cost, \$20.00.

DEPARTMENT OF PUBLIC INSTRUCTION.

In addition to the foregoing it would probably be well to have one large work bench equipped with a vise. A supply of lumber including 2 inch, inch and one-half inch stuff, can be provided at small expense.

Wherever desired or convenient a small gas engine may be installed to furnish power for turning lathe and small circular saw.

If any blacksmithing is to be done, one or two blacksmith's forges with proper supply of tools, hammer, chisel, etc. can be installed.

DOMESTIC SCIENCE.

The domestic science tables are usually in two forms, one with a case or cupboard attached, another a plain table with drawers underneath. These tables can be purchased at from \$3.50 to \$6 each and will accommodate from two to four pupils. There should be a half dozen of these tables with the necessary dishes for the use of students, one range with usual cooking utensils and one scale or balance.

DOMESTIC ART.

- $\frac{1}{2}$ doz. sewing tables.
- 2 doz. small scissors.
- $\frac{1}{2}$ doz. large shears.
- 1 sewing machine.
- 1 large flat-topped table.

Suitable supply of cloth, thread, needles, etc.

SCIENCE.

The usual laboratory material and apparatus for experiments in physics, chemistry and botany.

COURSE OF STUDY.

	First year, 9th grade.	Second year, 10th grade.	Third year, 11th grade.	Fourth year, 12th grade.
English.	Grammar, Reading, Spelling.	English classics. Business correspondence.	English literature. American literature.	(Boys) Building contracts and specifications, orations, business law. (Girls) Essays.
Mathematics.	Algebra.	(Boys) Business arithmetic, bookkeeping, farm economics. (Girls) Household economics.	Advanced and mental arithmetic.	(Boys) Elements of geometry. (Girls) Mental arithmetic.
Geography and Science.	Physical, Commercial.		Elementary chemistry.	Elementary physics.
Agriculture.	Botany.	(Boys) Elementary agriculture.	(Boys) Elementary agriculture.	(Boys) Elementary agriculture.
Domestic Science.		(Girls) Domestic science.	(Girls) Domestic science.	(Girls) Domestic science.
History and civics		American history.	English history $\frac{1}{2}$ yr. Civics, $\frac{1}{2}$ yr.	Political economy. General history.
Manual training.	(Boys) Shop work. (Girls) Sewing.	(Boys) Projects, farm utensils, etc. (Girls) Sewing.	(Boys) Farm machinery, care, repairs. Roads. (Girls) Hygiene, nursing.	
Drawing and music.	Freehand Voice, Rote singing.	(Boys) Models for shop work. (Girls) Freehand—Plants, designs of wall papers, etc. Voice, Elementary music.	(Boys) Same as 10th. Designing in architecture. (Girls) House furnishing and decorating. Chart and song book.	(Boys) Building plans, blue prints, etc. Pattern drafting. (Girls) Millinery, etc. Costumes. Chorus and song book.

SUGGESTIONS FOR WORK IN AGRICULTURE.

The following is an outline covering in a general way things that may be done and subjects that may be studied under the head of agriculture. This will include the subjects of farm economy and the application of physics and chemistry.

I. Soil:

1. Origin—
2. Formation—
 - a. Glaciers.
 - b. Winds.
 - c. Water.
 - d. Frost.
 - e. Plants.
 - f. Animals.
 - g. Gases in the air.
3. Kinds—
 - a. Sandy—locality in which it is found.
 - b. Clayey—locality in which it is found.
4. Modification of forms—
 - a. Clayey loam.
 - b. Sandy loam.
 - c. How modifications are produced. (Experiments).
5. Foods furnished to plants by soil—
 - a. Lime.
 - b. Soda.
 - c. Iron rust.
 - d. Nitrogen.
 - e. Sand.
 - f. Magnesia.
 - g. Potash.
 - h. Phosphoric acid. (Effect of absence of any of these elements and how detected).
6. How soil is exhausted—
 - a. Planting same crop year after year without fertilizing.
 - b. Planting crops that root at same depth.
 - c. Planting crops that require similar foods.
7. How soil is improved.—
 - a. Rotation of crops—
 - b. Tillage—
 - (1). Shallow *versus* deep plowing.
 - (2). Harrowing.
 - c. Effects of tillage—
 - (1). Coarse soil broken up.
 - (2). Fine and coarse soil mixed.
 - (3). Air gets into soil.
 - (4). Insects and their eggs destroyed.
 - (5). Soil protected from drought.
 - d. Drainage.
 - (1). Open ditches *versus* tile drainage.
 - (2). Importance of following natural waterways.
 - (3). Kind of soil generally in need of drainage.

- e. Effects of drainage—
 - (1). Sour soil sweetened.
 - (2). Rains soak in.
 - (3). Air gets into sub-soil.
 - (4). Plants root deeper.
- f. Summer fallowing—
- g. Fertilizing—
 - (1). Constituents of a good fertilizer.
 - (a). Nitrogen, found in nitrate of soda, sulphate of ammonia, etc.
 - (b). Phosphates, found in bone manures, and rock phosphates.
 - (c). Potash, found in wood ashes and potash salts.
 - (2). Barnyard manure for sandy and dark, clayey soil.
 - (3). Wood ashes for humus and light-colored, clayey soil.
 - (4). Best general fertilizer—barnyard manure.
 - (5). Value of quicklime and gypsum.

NOTE 1. Experiment: A plant food containing the essential elements found in soil may be fed to plants instead of soil and the result watched.

NOTE 2. Practical problems in arithmetic may be given in ditching and estimating cost of fertilizing, etc.

II. The plant:

For this subject, see some good elementary botany.

III. Crops:

- 1. Cereals—
 - a. Kinds.
 - b. Soil best adapted for each.
 - c. Climate best adapted for each.
 - d. Preparation of ground for seed.
 - e. Cultivation of crop.
 - f. Harvesting of crop.
 - (1). Stacking *versus* roof shelter.
 - g. Food plants take from soil.
 - h. How foods may be restored to soil.
 - i. Diseases and how treated—Oat smut.
 - j. Insect enemies and how treated—Hessian fly.
 - k. Disadvantages of grain farming.
 - l. Special study of corn. (Any other grain will do as well).
 - (1). Best varieties to grow for fodder.
 - (2). Best varieties to grow for grain.
 - (3). Climate influences variety.
 - (4). Manner of planting for fodder; for grain.
 - (5). How corn becomes mixed in the ear.
 - (6). Silo.
 - (7). Corn smut.
- 2. Root crops—
 - a. Outline similar to that for cereals.
 - b. Special study of sugar beet. (Determined by locality).
 - (1). Weeding.
 - (2). Thinning.

- (3). Hoeing.
- (4). Topping.
- (5). Harvesting.
- (6). Amount of sugar in beet.
- (7). How amount of sugar may be increased.
- (8). Value to the soil of beet pulp.
- (9). Value of beet pulp as a stock food.
- c. Special study of potato. (Determined by locality.)
 - (1). Early potatoes *versus* late potatoes.
 - (2). Commercial value of red potatoes and white potatoes.
 - (3). Common diseases and how treated—blight, scab.
 - (4). Insect enemies and how treated—potato beetle.
- d. Special study of onions. (Determined by locality.)
- 3. Leaf crops. (Determined by locality.)
 - a. Tobacco.
 - b. Cabbage.
 - c. Clover hay.
 - d. Timothy hay.

IV. Weeds.

- 1. Rye in wheat field.
- 2. Classes—
 - a. Annual.
 - b. Biennial.
 - c. Perennial.
- 3. Best means of destroying various classes.
- 4. Recognize common weeds at sight.

V. Stock on the farm.

- 1. Horses—
 - a. Draft horse—
 - (1). Breed, muscle, weight, wind.
 - (2). Blemishes.
 - (3). Common diseases and how treated—heaves.
 - (4). Insect enemies and how treated—bot fly.
 - (5). Care, shelter, pasture, food, salt.
 - b. Carriage horse—
 - (1). Same outline as above.
 - c. Best general purpose horse.

NOTE.—Have pupils select and describe examples in accordance with above outline—correlate with work in language and composition.

- 2. Cows—
 - a. Milch cows.
 - (1). Breed, disposition, general build.
 - (2). Care, shelter, pasture, food, salt.
 - (3). Regularity in milking.
 - (4). Care of milk.
 - b. Beef cows.
 - (1). Same outline as above.

NOTE.—Correlate with language and drawing.

3. Sheep. (Determined by locality.)
 - a. Meat producers.
 - b. Wool producers.
 - c. Shearing.
 - d. Same outline as above.
4. Swine. (Determined by locality.)
 - a. Same outline as for horses and cattle.

VI. Bees.

1. Kinds.
2. Care, swarming, shelter.
3. Grades of honey.
4. Commercial value of wax.

VII. Poultry.

1. Hens—
 - a. Egg producers.
 - b. Meat producers.
 - c. Best general hen.
 - d. Care, food, shelter.
 - e. Why variety of food is desirable.
 - f. Green food, bone food.
 - g. Common diseases.
 - h. Insect enemies.
2. Care of turkeys.
3. Care of ducks and geese.

VIII. Orchard.

1. Kinds of fruit as determined by soil and climate.
2. Planting, cultivating, pruning, budding, grafting.
3. Common insect enemies and how treated.
4. Common diseases and how treated.

IX. Small fruits.

1. How cultivated.
2. How propagated.
3. Preservation for winter use—canning, drying, etc.

X. Forestry.

1. Care of the wood lot.
2. Reforesting.

NOTE.—Correlate with nature study.

XI. Kitchen garden.

1. Location, care, variety of vegetables.
2. Storage—cellars, pits.

XII. Value of diversified farming.

XIII. Value of good water on a farm.

XIV. Farm buildings.

1. Location, drainage, etc.
2. Relative location.
3. Importance of implement shed and tool house.

XV. Things that will improve appearance of farm.

1. Paint.
2. Good fences.
3. Well-kept lawns.
4. Trees.
5. Flowers.

SUGGESTIONS.

Some use may be made of geology, botany, and chemistry, but scientific phraseology should be avoided and teachers should remember that agriculture is the science taught.

Correlation: This subject should be correlated with language, geography, arithmetic and drawing.

Make the work practical.

Sources of information: James' Practical Agriculture, Hatch and Hazelwood's Elementary Agriculture, George's Plan Books, Bulletins of Agriculture, Michigan Farmer, Teachers' Journal, conversation of practical farmers and men of affairs.

SUGGESTIONS FOR MANUAL TRAINING.

This course will principally cover instruction in the use of wood-working tools, their names, parts, uses and care. It will include exercises with pencil, knife, gauge, try-square and T-bevel; the making of the plain joint, the mortise, the tenon; splicing, and dove-tailing, with some wood carving. It is unnecessary to state here the different articles that may be made.

Blacksmithing. This will include the proper tending of forge, how to clean, start fire, hold heat; welding, annealing, tempering, twisting and soldering.

Drawing. The drawing will cover general freehand work, mechanical drawing, ornamental lettering, geometric construction, simple projection, drawing to square, geometric solids, perspective, architectural drawing—including plans, elevations, details, working drawings and blue prints.

Domestic Science and Art. This work will include basting, stitching, gathering, buttonholing, darning, patching, feather stitching, and applications of these on small garments and other useful articles, such as kimonos, aprons, sewing bags, etc. The eye must be trained to accuracy. In the latter part of the work of sewing we may include measuring, drafting of fitted linings, waists and skirts, and cutting from drafts and patterns.

In the work of cooking we should include building and care of the fire, oven temperature, sources and composition of foods, food values and classifications of foods, chemical changes in the process of cooking, and for practical work a study of marketing, cuts of meats and carving. To this will be added laboratory work in which each student will prepare representative foods such as beverages, cereals, eggs, meats, soups, vegetables, breads, cakes, etc.

LIBRARY.

It will not be possible to supply at the beginning a full working library, but each year should find additions until the school is well equipped. It should contain sets of works in literature, history, science and art, such as are proper for any private or public library, and in addition the following books should be secured as early as possible as they deal particularly with some of the special subjects to be taught in the rural high schools.

GENERAL REFERENCES.

Adams,
Commercial geography.....D. Appleton & Co.
 Bender,
The teacher at work.....Educational Publishing Co.
 Hinsdale,
Teaching the language arts.....D. Appleton & Co.
 Hodge,
Nature study.....Ginn & Co.
 Kratz, H. E.,
Studies and observations in the schoolroom.Educational Publishing Co.
 Painter,
History of education.
 Redway,
Commercial geography.....Charles Scribner's Sons.
 Seidell, R.,
Industrial education.....D. C. Heath & Co.

AGRICULTURE.

Armsby, H. P.,
Manual of cattle feeding.....Wiley & Sons.
 Bailey, L. H.,
Types of farming.....}
Principles of agriculture.....}
Principles of fruit growing.....} The Macmillan Co.
 Beal, W. J.,
Grasses of North America.....Henry Holt & Company.
 Coburn, F. D.,
Swine husbandry.....Orange Judd Company.
 Collins,
New agriculture.
 Felch, I. K.,
Poultry culture.....Donohue.
 Goff & Mayne,
First principles of agriculture.....American Book Co.
 Goodrich, Charles L.,
The first book of farming.....Doubleday, Page & Co.
 Gurler, H. B.,
American dairying.....Breeder's Gazette.

